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ABSTRACT

Five computer programs for the Macintosh that are geared for Computer-Assisted Language Learning (CALL) are described. All five programs allow the teacher to input material. The first program allows entry of new vocabulary lists including definition, a sentence in which the exact word is used, a fill-in-the-blank exercise, and the word's phonetics for use with a speech synthesizer. Six levels of vocabulary and five exercise types are included. The second program allows creation of exercises on a template by filling in necessary information. On this program, the teacher can monitor learner errors and can create graphics and a glossary. The third is an interactive United States geography game for which teachers can design their own questions and enter facts and information on any state or on the nation as a whole. The fourth allows the user to browse, select a program, make text and graphics changes, create text, and offers great flexibility of application. The fifth program produces animation using two different styles: real-time animation and frame-by-frame animation. Source addresses for all five programs and a software evaluation instrument are included. (MSE)

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CALL ON MAC

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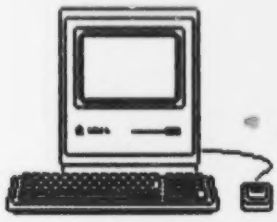

CALL (Computer-Assisted Language Learning) appeals to different learning styles and provides an individualized, nonthreatening form of instruction that supplies very important immediate feedback. Unfortunately, in order to use the computer, it seems that it has been necessary to learn the language of the computer. This situation is changing, however, as more "user friendly" systems are becoming available.

"User friendliness" was the initial attraction to the Macintosh computer. Unfortunately, not very much educational software has been made commercially available. As is often the case with much educational software, the quality and the suitability of the software available is not always appropriate for a particular language learning task.

Since instructors know the content and approach that works best for their students, perhaps they should be the ones to design and implement suitable software for the desired learning task. Is this possible? Can instructors design software without needing to invest inordinate amounts of time and effort?

Five software programs that allow the teacher to input material with varying degrees of flexibility for the Macintosh computer are Word Attack (Davidson & Associates, Inc.), Private Tutor System (Dr. Stephen Clausing, Yale University), Hypercard (Apple Computer,Inc.), American Discovery (Great Wave Software),and VideoWorks (Macromind, Inc.).

WORD ATTACK! (Davidson & Associates, Inc.) allows the teacher to enter new vocabulary lists through the Editor. These lists can be comprised of words from any field of study, as well as arithmetic formulas.

There are five functions which the author-teacher must delineate: the word itself, the meaning of the word, a sentence in which the exact word is used, a fill-in-the-blank exercise, and the phonetics of the word if MacinTalk, the speech synthesizer for the Macintosh, is used. We have found the speech quality of the synthesizer to be very poor, thus have not used the phonetic function of the program.

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Word Attack comes with six levels of vocabulary and five types of exercises, which can be accessed at any time. Students wishing to take the pretest will be informed of the percentage of correct responses and the number of words they need to study. Other choices available to students are: wishing to take the pretest will be informed of the percentage of correct responses and the number of words they need to study. Other choices available to students are:

(1) Word Display, which allows students to select words missed on the pretest from a list of the vocabulary words used in that particular lesson and gives a definition and example sentence for each word selected by the learner.

(2) Multiple Choice, which helps reinforce what students have already learned, gives four possible definitions for the word displayed. Incorrect choices turn gray and allow the student to try again. The correct choice is reinforced with a beep. A scoreboard gives the percentage of correct responses and the number of words missed.

(3) Word Match, which allows students to test their knowledge of all the words and meanings, gives a maximum of 20 words alphabetically then randomly presents their definitions. Student select the definition that matches the word. If correct, the definition and the word are moved to the center of the screen. A scoreboard gives the percentage of correct responses and the number of words missed.

(4) Word Usage, which is the most difficult of all the activities in Word Attack, gives a sentence with a blank and a definition for the missing word above the sentence. The student must complete the sentence by typing in the correct word. If the student gives an incorrect response, the entire list of words is automatically displayed so the error can be corrected. A disadvantage is that typing mistakes are counted as incorrect responses. The scoreboard indicates the number of responses answered correctly without help.

(5) Word Attack, which is an entertaining game, also reinforces what has been previously learned. The student must select the correct word for the definition given which the wizard then zaps with his wand. The game can be played at three speeds-regular to fast, depending on proficiency. The student's score plus the previous high score of the game are displayed below the word definitions so that the student competes with the previous high score. A disadvantage of this game is that the student must calculate the correct angle to zap the correct answer or the bat which gives bonus points.

All the Word Attack selections available to the student can be augmented by the instructor through creating new documents by using the editor function.

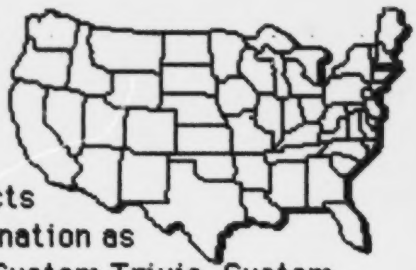
PRIVATE TUTOR by Dr. Stephen Clausing of Yale University, allows the teacher to create exercises on a template by filling in necessary information and running it through the internal debugger. The student then runs through the exercise, which the teacher can then recreate on the extractor to help monitor learner errors. An instructor-designed glossary as well as graphics which the instructor must add, can be made available to the student for help in answering the questions. In addition to this, the student has access to three levels of help at all times:

(1) The program shows in bold the incorrect portion of the student's response.
(2) The program retrieves a help window, which has previously been designed by the instructor, to help answer the question correctly.

(3) The program provides the learner with the actual answer.

No scoreboard is used as this is in contrast to Dr. Clausing's teaching philosophy.

The student must read the instructions and then type the correct response into the blank provided. After completing this task, the student must press the return key or Enter to have Private Tutor check the response. If a mistake is made, then the student should choose the "Take Back Entry -- Redo" command from the EXCEPTIONS menu or delete the response with the DELETE key; otherwise, Private Tutor will indicate that your response is correct and automatically go on to the next question. The two possible formats for teachers to work with are fill-in-the blank and short answer which can be used in the same exercise.



AMERICAN DISCOVERY is an interactive geography game for learning states, capitals, rivers and lakes, neighboring states, trivia and history of the United States. Discovery Maker allows author-teachers to design their own questions and enter facts and information about any of the fifty states or the nation as as whole. You can create three types of questions: Custom Trivia, Custom Locations, and Custom Explore.

Author-teachers first enter the QUESTION, which can be up to two lines long and must have a state or group of states for an answer. Then, by pressing the ENTER key, they move to the HINT box. The hint given, which is optional, can be up to one line long and should give the students an idea about what the correct answer to the question is.

Again by pressing the ENTER key, the author moves to the MORE INFORMATION box, which provides additional information relative to the question or hint. You can add unlimited information in this section, which like the HINT section is optional.

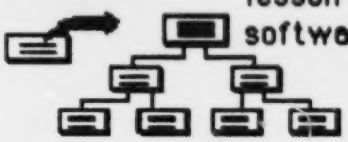
The next step in the authoring process is inserting the NUMBER OF ANSWERS you will allow per question. The default value here is 1, but you can enter as many as 15 answers per question. If there is more than one answer for your question, then enter the correct number of answers in the box.

The last group of steps, establishing the number of points credited to a player with or without hints and entering the correct answer are performed as follows. First, the default for the number of points credited to a player who answers a question without a hint is 2, and the default for answering with a hint is 1.

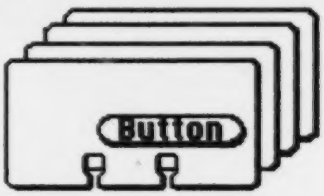
You will also need to enter an answer for each question in the ANSWER CELLS. First move the pointer over the abbreviation for the state or states that are the correct answer to your question. The full name of the state or states will appear at the bottom of the STATES ABBREVIATION box. Click on the abbreviation for the correct answer, and it will automatically appear in the ANSWER CELL.

The game can be played by one or two players whose scores are automatically kept. It is a handy tool for travel and tourism students and for students interested in learning about the geography and history of the United States.

HyperCard



Hypercard, provides the instructor with greater flexibility than the other programs mentioned because of the possibility for the instructor to manipulate sound and graphics and to connect the lesson within Hypercard to other software applications.



A Hypercard stack can be thought of as a stack of cards on a rolex. These cards do not have to be read in a linear fashion. The student can select the area of the program he or she desires and proceed through the lesson in any way he or she wants. This type of student control allows learners to concentrate on sections or items that are of interest to them and often this increases the amount of time the students desire to spend on the language learning task.

There are several levels of use in Hypercard. The first level, browsing, only allows the user to look at the stack. At this level no changes can be made in the stack.

The second level, typing, allows the user to make changes in the text in the fields, but no changes can be made to the graphics. Each field can only contain one font in one size, but the size of the card is the only limitation to how many fields can be put on a card. In the Macintosh environment, it is possible to have many styles and sizes of fonts, as well as outlining, shadowing, making fonts bold, and underlining.

The third level, painting, allows the graphic elements on the card to be changed. The user can import graphics or draw them on the card. Moreover, now the use of a scanner makes it possible to import graphics from many different sources.

The fourth level, authoring, allows the user to copy and manipulate the many prepared cards and buttons that come with the Hypercard stacks. The author can manipulate fields, buttons, and graphics to create his own stacks.

The fifth level, scripting, is the programming level of Hypercard. The more experienced user can learn the Hypertalk programming language and take advantage of further capabilities permitted by this application.

Since it is possible for the instructor to design a program in which the cards are linked by buttons to one another, the use of the keyboard by the student can be unnecessary. Everything in the program could be done with the mouse, thereby, making it possible for students without keyboarding skills to use the program.

A button is extremely flexible. It can produce sound (through a digitized sound system like MacRecorder), graphics, as well as take you to another application. It can also access a CD-ROM disc in an interactive video program.

An additional advantage of Hypercard is that anyone who has a Macintosh computer is sure to have Hypercard. This means that the stack you build (lesson you create) will run on other Macintosh computers without difficulty.

VIDEOWORKS (MacroMind, Inc.) produces animation using two different styles: real-time animation and frame-by-frame animation. Using CheapPaint you first create your cast members. Then for real-time recording select the cast member you want to animate, and click the PLAY button on the control panel. Then while holding the mouse, move the pointer around the stage and then release it.

For frame-by-frame animation you need to add a frame each time you want the character to move. There are three ways to do this. First, you can add a frame by clicking the ADD button on the control panel. You can achieve the same result by pressing COMMAND A. The last way you can add a frame is by selecting ADD from the options menu.

You can use the evaluation instrument provided and go through exercises using each of these programs on the machines provided. If you want to obtain more information on the programs contact:

Word Attack!
Davidson and Associates, Incorporated
3135 Kashiwa Street
Torrance, California 90505
(213) 534-4070

Private Tutor
Professor Stephen Clausing
408 Thoreau Road
Branford, Connecticut 06405
(203) 488-6527

American Discovery
Great Wave Software
5353 Scotts Valley Drive
Scotts Valley, CA 95066
(408) 438-1990

Hypercard
Apple Computer, Incorporated
20525 Mariani Avenue
Cupertino, California 95014
(408) 966-1010

MacRecorder
Farallon Computing, Incorporated
2150 Kittredge Street
Berkeley, California 94704
(415) 849-2331

VideoWorks
Macromind, Inc.
1028 West Wolfram St.
Chicago, IL 60657
(312) 871-0987

All these programs, except Private Tutor, are available at your local computer store. Private Tutor is only available from Dr. Clausing.

COURSEWARE EVALUATION INSTRUMENT

Arrangement of Screen

	YES	NO
Is the arrangement of the screen attractive and unconfusing for naive students?	☐	☐
What information is available to the user on the screen-		
An orientation to the system?	☐	☐
A guide to the structure of the lesson?	☐	☐
The location of the learner in the lesson?	☐	☐
Instructions for the exercises?	☐	☐
HELP messages?	☐	☐
Response area?	☐	☐
Feedback area?	☐	☐
Learner options according to the degree of structure in the lesson -		
To go forward in the exercise?	☐	☐
To go back to previous exercises?	☐	☐
To go forward to other sections?	☐	☐
To go back to previous sections?	☐	☐
To exit the lesson?	☐	☐
To review the instructions?	☐	☐
What is the type of screen display-		
Split screen?	☐	☐
Pop up/pop down windows?	☐	☐
Shrinking and expanding areas?	☐	☐
A combination of types?	☐	☐

	YES	NO
Is the authoring system limited by the type of hardware that is available?	☐	☐
Do learners need to use function keys on the keyboard?	☐	☐
Are peripherals in addition to a keyboard needed?	☐	☐
Are questions, learner responses, and feedback easily accessible to the learner?	☐	☐

Graphics

	YES	NO
Capabilities		
Does the authoring system have graphic creation capabilities?	☐	☐
Does the authoring system have animated graphic creation capabilities?	☐	☐
Is a selection of graphics available to incorporate into the lesson?	☐	☐
Reinforcement Graphics		
Do reinforcement graphics come with the system?	☐	☐
Does the manner in which the graphics are displayed add to the presentation?	☐	☐
Does the system allow the author to create his own reinforcement graphics?	☐	☐
Are animated reinforcement graphics available?	☐	☐
Are animated displays beneficial to the learner?	☐	☐

Sequencing, Branching, and Learner Control

	YES	NO
Does the learner have a choice of-		
Level of difficulty?	☐	☐
Sequence of instruction?	☐	☐

	YES	NO
Time spent in practice or completion?	☐	☐
Where he goes in the lesson or other sections?	☐	☐
The number of attempts before the correct response is given?	☐	☐
Time allowed for each response?	☐	☐
If the learner does have some control of the lesson, does he receive advice or guidance concerning how to best use that control?	☐	☐
Is a regularly updated diagnosis available?	☐	☐
Is a prescription given to the learner so he knows how to proceed?	☐	☐
Are progress reports given to the learner?	☐	☐
Is recognition given for work already completed when the learner reenters the program?	☐	☐
Is the amount of control compatible with the nature of the learner population?	☐	☐
Is the amount of control compatible with the nature of the subject being taught?	☐	☐
Does the system have knowledge-based capabilities?	☐	☐

Types of Feedback	YES	NO
Is immediate feedback possible?	☐	☐
Does the style of the feedback acknowledge that the learner may have a correct response?	☐	☐
Is corrective feedback possible?	☐	☐
Is attribute isolation feedback possible?	☐	☐
Is correct rule feedback possible?	☐	☐

Error Correction Feedback

	YES	NO
Can the program determine if the learner is totally unfamiliar with the material?	☐	☐
Can the program show the correct response?	☐	☐
Is the correct response available before the learner gives a response?	☐	☐
Is knowledge of correct response available after the learner gives a response?	☐	☐
Can the program identify the assumption or rule that the learner uses to solve the problem?	☐	☐
Is a specific response to each incorrect response possible?	☐	☐
Is a HELP section that reviews the main points of the lesson available at all times?	☐	☐

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